

ABSTRACT OF THE DISCLOSURE

A method for digital simulation of a non-linear interaction between an excitation source and a wave in a resonator, and is particularly applicable, to real-time synthesis of digital signals representing an oscillating phenomenon such as the sound produced by a musical instrument. The invention is characterized in that it consists in calculating the digital signals from equations whereof the solution corresponds to the physical representation of the phenomenon to be simulated which is expressed, each time and in each point of the resonator, by a relationship of impedance or of admittance between two variables representing the effect and the cause of the phenomenon and in directly transcribing the equation of the impedance or of the admittance in the form of a linear filter including delays, so as to produce a non-linear interaction between the two variables of the impedance or admittance relationship.